

# Northern Neck Planning District Commission Virginia Coastal Zone Management Program Technical Assistance Grant FY 19, Task 45 Final Report



**Virginia Coastal Zone**  
MANAGEMENT PROGRAM



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## I. Coastal Management Support

NNPDC staff provided continuing coastal management support to the four counties and six towns of the Northern Neck as well as the Northern Neck Land Conservancy, Friends of the Rappahannock, the Northern Neck Master Gardeners Shoreline Evaluation Program, the Northern Neck Chesapeake Bay Public Access Authority, Northern Neck Soil & Water Conservation District, and myriad other regional, state and federal entities dedicated to environmental stewardship, conservation and resiliency. Support provided includes, but is not limited to, regional coordination, technical assistance, planning, grant writing, project management, GIS analysis, and mapping products. Support through regional coordination included collaboration with the Special Assistant to the Governor for Coastal Adaptation and Protection in support of the development of the Virginia Resilience Master Planning Framework for the purposes of maximizing consideration of rural coastal management issues and alignment with local priorities. Additional support through regional coordination included collaboration with Wetlands Watch to further discussions for local participation in the CRS program by all four counties of the Northern Neck through NNPDC staff participation in the CRS Workgroup and by disseminating that information to local staff. Other support through regional coordination included collaboration with the Virginia Coastal Policy Center through participation in forums and contributions to reports and collaborative documents to maximize policy considerations for coastal management issues facing rural coastal localities. Support for regional coordination also included NNPDC staff participation in and facilitation of the Resilience Adaptation Feasibility Tool (RAFT). The RAFT is a multi-year effort to assist individual localities with resilience planning and capacity building with the intent of fostering local and interregional engagement with an emphasis on implementation. NNPDC staff participation was critical to the adoption of the RAFT by all ten Northern Neck localities and has helped create continuity between local implementation activities such as the creation of a local and regional emergency communications strategy and the initiation of annual hazard mitigation planning activities.

Technical assistance and GIS mapping support were provided to the Towns of Warsaw (Figure 1) and White Stone (Figure 2) for zoning updates related to ongoing business district revitalizations. Comprehensive plan analysis and GIS mapping support were provided to Colonial Beach for a comprehensive plan update (Figure 3). Additionally, GIS analysis and mapping products were supplied to the Northern Neck Master Gardeners Shoreline Evaluation Program (Figure 6, Figure 7), Northern Neck Chesapeake Bay Public Access Authority (Figure 4, Figure 5), Friends of the Rappahannock, and the Northern Neck Septic Pump-out Program. Additional support included planning, grant writing, and technical assistance for proposed stormwater and nutrient management projects for the Towns of Warsaw and White Stone. Additional support was provided through collaboration in projects pertaining to the furtherance of eco-tourism and the support of coastal resource dependent industries. Examples of these products are attached and additional products of this coastal management support are available upon request.

The benefits of this continuing support range in their effects and include the identification and mitigation of environmental impacts of those projects reviewed where construction is being undertaken, such as the Warsaw and White Stone Business District Revitalizations. Other benefits include ensuring the accuracy and completeness of local zoning and comprehensive plans. Technical assistance and planning support were provided to Colonial Beach for an update to its Comprehensive Plan to incorporate State-mandated inclusion of language and to incorporate resilience throughout the plan. Additionally, benefits to erosion and sediment control and nutrient management of the Northern Neck's waterways through regional efforts to increase consideration of natural and nature-based best management practices, such as continued support of the Northern Neck Master Gardeners Shoreline Evaluation Program and Northern Neck Soil and Water Conservation District Programs; and more specifically, through local projects such as stormwater projects in Warsaw and White Stone. Other benefits include education and outreach through a myriad of environmental stewardship, conservation, and resiliency efforts and educational initiatives in partnership

with Friends of the Rappahannock and the Northern Neck Soil and Water Conservation District. Countless other unquantifiable benefits result from the regional coastal management support provided to Northern Neck localities and environmental organizations.

## II. Local Planning Coordination and Training

NNPDC staff continued to provide coordination of coastal planning efforts and training opportunities to its member localities. Local planning coordination included the identification of locality specific resilience priorities and discovery of potential adaptation and resilience projects in support of the development of the Virginia Coastal Resilience Master Planning Framework. NNPDC staff facilitated local participation in the Resilience Adaptation Feasibility Tool (RAFT) by all four counties and six towns in the Northern Neck. NNPDC staff, in collaboration with RAFT core team, met regularly with locality administrators and staff to discuss the implications and benefits of resilience planning and to strategize complementary planning actions to maximize benefits and align state and local priorities. Local planning coordination also included collaboration with VDOF, NNSWCD, FOR, and the NNLC to gather local input and support for a regional blue and green infrastructure assessment to prioritize and promote conservation and to compliment water quality planning efforts. NNPDC staff, in collaboration with stakeholders, met with locality administrators and staff to identify priority conservation areas, opportunities to align conservation efforts with local ordinances, and to prioritize implementation opportunities. Additionally, NNPDC staff conducted quarterly Land Use Administrators and Coastal Managers meetings to coordinate planning efforts and to provide training to local Administrators and staff. Trainings and meetings topics aimed to adhere to a continuing theme of concern to coastal communities, resiliency, and the protection of coastal resources.

The first local coordination and training meeting was held on October 9, 2019 and was conducted with the RAFT core team, consisting of representatives from Old Dominion University, the Institute for Engagement and Negotiation at the University of Virginia, and the Coastal Policy Center at William and Mary. The purpose of the meeting was to introduce local administrators and staff to the Resiliency Adaptation Feasibility Tool (RAFT). The RAFT is a multi-year resilience planning and implementation effort designed to ascertain a locality's level of resilience and build capacity for implementation. The meeting resulted in engagement with local land use and emergency management staff to ascertain current local programs and policies that build resiliency and served to set the stage for a multi-year planning effort to increase capacity for implementation and build community resilience.

NNPDC staff, in coordination with the RAFT Core Team, held eight virtual local workshops for the Resiliency Adaptation Feasibility Tool (RAFT), one each with the four Counties, Kilmarnock, Colonial Beach, Warsaw, and White Stone. During each workshop NNPDC and RAFT Core Team members engaged with a diverse set of stakeholders including local land use and emergency management staff, Social Services and Health Departments, NNSWCD, environmental organizations, and other community organizations to ascertain current local programs and policies that build resiliency and develop action checklists with implementable actions that build community resilience. Particular attention was paid to capacity building at the local level to foster engagement and create a self-sustaining and perpetual vehicle for resilience planning and implementation. Over the following months, NNPDC staff, in coordination with the RAFT Core Team, participated in virtual monthly meetings for each of the eight participating localities. Each monthly meeting built off the outcomes of the local workshops and continued with the implementation the local action checklists. The RAFT meetings also served to address regional resilience though the advancement of priorities identified in the regional Hazard Mitigation Plan generated an incremental approach to the Hazard Mitigation Planning process. The RAFT meetings resulted in regional coordination on an emergency and preparedness communication strategy and the identification of hazard mitigation planning deficiencies.

### III. Northern Neck Green

NNPDC staff, in collaboration with the newly established Northern Neck Environmental Stewardship Consortium (NNESC), created the [NNKgreen.org](http://NNKgreen.org) website in 2015 with funds from the VACZM program, grant #NA15NOS4190164. The website acts as a regional clearinghouse and events calendar for environmental topics relevant to the Northern Neck of Virginia. The website is maintained by NNPDC staff, who act as administrator, and members of the NNESC, which consists of organizations dedicated to making the most out of the region's air, land, and water.

This grant year, NNPDC staff maintained and directed content across the site related to environmental news, projects, meetings, and events in the Northern Neck. Topics posted included: Agricultural and Farming; Climate Change & Sea-Level Rise; Environmental Guidelines and Regulations; Environmental equity; Land Conservation; NNK Environmental Organizations; Plants, Trees, Gardening, and Lawn Care; Recreation in Nature; Shoreline Erosion Control; Solar Energy; Stormwater Management and Water Quality; Transportation; Volunteer Opportunities; Waste Disposal and Composting; Wetland Protection and Preservation; and Wildlife, Fisheries, Birds, Insects and Bugs. Additionally, NNPDC staff engaged with environmental education and outreach leaders, such as the Northern Neck Soil and Water Conservation District, Friends of the Rappahannock, Rappahannock River Valley National Wildlife Refuge, Northumberland Association for Progressive Stewardship, and the Northern Neck Land Conservancy to increase the site's utilization as the premiere platform to educate residents of the Northern Neck and inform them regarding events and educational opportunities throughout the year.

The website has been an increasingly useful tool for environmental outreach in the region since it was established and considering the challenges faced by the Coronavirus pandemic in this grant year the website served as a way for residents to plan for and engage in environmental activities throughout the region in a safe manner. In 2019-2020, the number of visitors to [www.NNKgreen.org](http://www.NNKgreen.org) steadily increased (Figure 18).

### IV. Hazard Mitigation Assistance Grant House Elevation Program

The Northern Neck Planning District Commission administers a program to assist localities and residents mitigate the impacts of recurrent flooding through the elevation of structures prone to repetitive loss (Figure 8). NNPDC staff assisted localities in the Northern Neck through the administration of several home elevations funded by FEMA, with additional funding, when required, by VDEM and/or the property owners.

In this grant year, NNPDC staff have assisted Essex County with the elevation of four homes, awarded in 2019, in the Lowry Point area that are prone to recurrent flooding and vulnerable to flooding due to severe weather. NNPDC staff provided grant writing assistance and technical support to Essex County and property owners to apply for funds and received \$525,000 in FEMA funding to cover part of the cost. To date two of the four homes have been elevated with the remaining two slated to begin construction. NNPDC staff conducted project management and oversaw the completion of construction activities and project closeout.

The Program also received funding for the elevation of six homes, awarded in 2020, three in the Lewisetta area of Northumberland County (Figure 11, Figure 12), where the program has elevated five homes since 2013, one in the Little Florida area of Richmond County (Figure 13, Figure 14), where there is severe recurrent flooding, and two in the Morattico area of Lancaster County. In all cases, the homeowners have been affected by repetitive loss and are seeking mitigation assistance. The total FEMA funding to elevate those homes is \$1,233,400. NNPDC staff assisted the counties and property owners with grant writing assistance and technical support in the application process and will oversee project management activities.

The Program has pending applications, with anticipated award in 2021 and 2022, for Hazard Mitigation Grants to elevate six additional homes in the Northern Neck. NNPDC staff have provided grant writing assistance and technical support to Northern Neck localities and residents to fund the elevations. Pending applications include two additional projects in the Little Florida area of Richmond County (Figure 9, Figure 10), one additional project in the Lewisetta area of Northumberland County, one project each in the Windmill Point and Morattico areas of Lancaster County, and one project in Northumberland County.

## V. Living Shoreline Initiative

NNPDC staff endeavored to increase the use of natural and nature-based features, specifically living shorelines, in an effort to spur adaptation, build coastal resiliency and as a means for maintaining water quality. NNPDC staff have developed a diverse stakeholder group which encompassed a myriad of interests which converged around unique issues presented by coastal living. The initiative leverages environmental stewardship, resiliency, and water quality organization assets across the region in addition to leaders in related industries and educational institutions. The initiative continuously assesses the roles of each stakeholder to foster collaboration, maximize capacity, and mitigate the duplication of efforts. The primary goal of the initiative is to promote the use of living shorelines and other natural and nature-based features among developers and residential property owners through collaboration, planning, education, outreach, and incentives. A secondary goal is increasing the affordability of living shoreline through the education of local designers, engineers, contractors, landscapers and suppliers. By increasing the prevalence of living shorelines in various industry sectors it could precipitate reductions in development costs. A benefit resulting from the initiative is the increased attention to living shoreline implementation by local wetlands boards as well as shoreline engineers, designers, and contractors. The Northern Neck region has experienced an increase in the use of natural and nature-based features, such as living shorelines, to managed stormwater runoff and protect personal property. Amendments to State policy have prioritized living shorelines in shoreline management and have resulted in local programmatic changes which favor living shorelines over hardening practices.

NNPDC staff, in collaboration with Friends of the Rappahannock (FOR), continue to promote and utilize as educational tools six living shoreline demonstration sites across the Northern Neck region which were created for this sole purpose through a previous NFWF grant. In this grant year, NNPDC staff collaborated with FOR to conduct maintenance on the demonstration sites using other sources of funding. The maintenance included marsh rehabilitation and elevation and the establishment of oyster reefs for added ecologic value and protection. The maintenance of demonstration sites also served as an educational tool for local students who volunteered as a component of local school programs advancing environmental education. Additionally, NNPDC staff and FOR utilized the demonstration sites as an outreach tool for local shoreline contractors to promote the use of living shorelines in favor of shoreline hardening.

## VI. Northern Neck Chesapeake Bay Public Access Authority

The NNPDC staffs the Northern Neck Chesapeake Bay Public Access Authority (NNCBPAA) which was established and codified in Chapter 66.1 (§ 15.2-6626 et seq.) of Title 15.2 of the Code of Virginia in 2005. NNPDC staff, at the behest of the NNCBPAA, conducted a comprehensive inventory of public water access locations in the four counties of the Northern Neck. NNPDC staff conducted site visits to each locally identified public access location throughout the region. The site visits included a detailed assessment and documentation of each site's amenities and their condition. Where applicable, NNPDC staff noted opportunities to improve a site's amenities or incorporate new amenities, such as waste and monofilament receptacles or seating and picnic facilities. During the site visits, NNPDC staff, assessed and documented existing and needed signage to ensure visitors can locate the site and to ensure appropriate agency credit.

NNPDC staff then collated the collected information into a comprehensive database of public water access sites and amenities for the Northern Neck region. The resulting inventory was used to populate a digital Google map of public access and water trail features in the Northern Neck completed under another VCZMP grant, NOAA grant #NA19NOS4190163. The resulting mapping product features a listing of public water access sites in the Northern Neck complete with available amenities, detailed directions, images and other useful information for visitors. The inventory and resulting mapping products are available in two separate locations online: on the Northern Neck Tourism Commission's website at <https://www.northernneck.org/parks-nature-trails/> and on Virginia Water Trails website at <https://viriniawatertrails.org/northern-neck/>.

Public access and on-water ecotourism opportunities are a vital to the economic interests of the Northern Neck. Coastal management efforts undertaken by the NNPDC and funded by the VCZMP receive maximum exposure when residents and visitors are offered the opportunity to explore the region's natural spaces. The products of this grant offer a convenient way for residents and visitors to plan their on-water experience and know what amenities are available. The Northern Neck Comprehensive Economic Development Strategy (CEDS) identifies the "development of additional public water-access points" as a key objective (Objective B) in achieving one of its main goals (Goal 4) to "promote and protect effective sustainable use of the region's natural beauty, cultural amenities, and tourism opportunities". The inventory and resulting mapping product will be utilized in subsequent years to "develop a plan to increase use of public access sites to foster economic activity" in furthering that objective.

## VII. Low Impact Stormwater Retrofit in the Town of Warsaw

NNPDC staff provided technical assistance and grant administration for a National Fish & Wildlife Foundation pass-through grant on behalf of the Town of Warsaw to assist with a stormwater solution for the Town. For several years Warsaw has been researching ways to protect its downtown area, residents, and businesses from increased flood risk and prevent polluted stormwater from entering local creeks and streams that lead to the Rappahannock River, which supports an essential seafood economy. The Town suffers from outdated and inadequate stormwater management infrastructure which has exacerbated economic decline and blight in the downtown area, which floods during rainfall. NNPDC staff developed a NFWF application and was awarded \$200,000 from the Chesapeake Bay Small Watershed Grants Implementation fund towards this project to construct several stormwater best management practices, native plant gardens, trees, trails, and greenspace in the center of Town, visible from Route 360. Additionally, the Town received funds in the amount of \$618,550 from DEQ's Stormwater Local Assistance Fund (SLAF) and \$300,000 from a Community Development Block Grant (CDBG) to fund the remainder of the low impact stormwater retrofit. The project is comprised of multiple elements including the demolition and removal of impervious surface, the installation of a 2-acre stormwater retention pond and other chain BMP components, and the redirection of stormwater from the downtown area to the stormwater retention area. NNPDC staff helped administer all aspects of the NFWF grant in coordination with project engineers and the Town of Warsaw.

The Warsaw Low Impact Stormwater Retrofit project simultaneously addresses nutrient and sediment pollution in stormwater runoff, reduces erosion in local streams, and provides large volumetric treatment for stormwater flows from a 63.7-acre drainage area which will greatly reduce the incidence of flooding in the adjacent commercial downtown area. Although the project is still under construction and has yet to go online, the anticipated nutrient reductions are as follows. Total Phosphorus Load Reduction of at least 44.03 lb/yr. and the pond is designed to provide a reduction of 47.49 lb/yr, Total Nitrogen Load Reduction of at least 359.10 lb/yr., and a Total Sediment Load Reduction of at least 39.29 tons/yr., which are based on the overall impervious area and managed turf area draining to the pond (not just on-site, but throughout the Town). The actual nutrient reductions have yet to be calculated, but the anticipated reductions greatly



contribute to Richmond County's Watershed Implementation Plan (WIP) reduction goals. Additionally, NNPDC staff, in coordination with the Town, plan to use the BMP site, dubbed "The Bounds", as a demonstration facility, complete with interpretive signage and native plantings. The site will be used by Richmond County and the Town of Warsaw as an educational tool for local students participating in environmental education and will serve as an example of stormwater best management practices for other localities.

## VIII. Benefits Accrued from Previous VACZM Grants

NNPDC staff tracked measurable benefits accrued from previous grant products that have served as a foundation for additional projects. The initial funding of projects which developed the region's first water trails has resulted in the expansion of the Northern Neck Water Trail Network and a plan to update the network for greater inclusion of the region's indigenous cultural landscape in the interpretive narrative of the trails. Additionally, a plan has been developed to update and market the Northern Neck Water Trail Network to increase public access to the trail network and to create uniformity with water trails on the Eastern Shore and Middle Peninsula for inclusion in [virginiawatertrails.org](http://virginiawatertrails.org). This ecotourism collaboration effort will incorporate the tenets of resiliency through continued VCZMP funding, further ensuring its lasting benefit to tourism activities in the region.

Additional benefits include NNPDC staff contributions to the development of the Virginia Resilience Master Planning Framework. VCZMP activities have culminated in the development of the statewide plan and have led to the funding of resilience capacity building in Virginia's Coastal Zone. Continued VCZMP funding of technical assistance and resilience capacity building will see additional benefits accrue in subsequent years.

Additional benefits include the initiation of a blue and green infrastructure assessment and watershed management plan. This work utilizes the assessments of green infrastructure and facilitated meetings funded with past VCZMP grants. Other benefits include the initiation of an assessment of dredging and beneficial use projects in the region. Building off the outcomes of previous VCZMP grants, the NNCBPAA will conduct the assessment of waterways identified in the Shallow Draft Navigation and Sediment Management Plan in order to prioritize critical dredging needs.

Other benefits include the continuation of the Northern Neck Assign-A-Highway program which saw over ten tons of litter collected along Northern Neck roadways and another successful Virginia Clean Waterways event. The Northern Neck program ensures litter and debris are removed and mitigates local waterway contamination. Other benefits include NNPDC staff participation in and contributions to several environmental technical advisory groups that indirectly resulted from work funded by the VCZMP. NNPDC staff, in collaboration with academic institutions and environmental groups, have participated in efforts to study the impacts of sea level rise and flooding on critical transportation infrastructure and the economic well-being of the Coastal Region.

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## Appendix 1: Figures

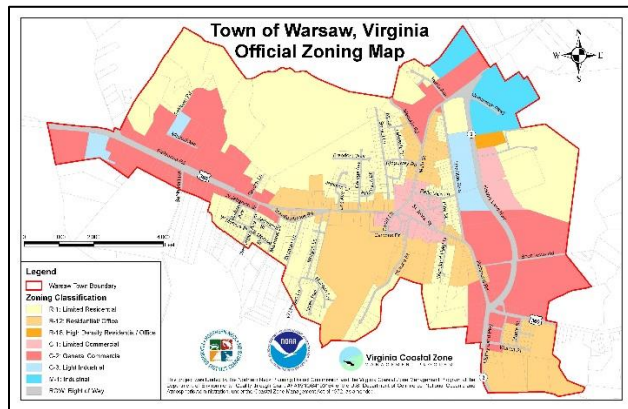


Figure 1: Town of Warsaw Zoning Map

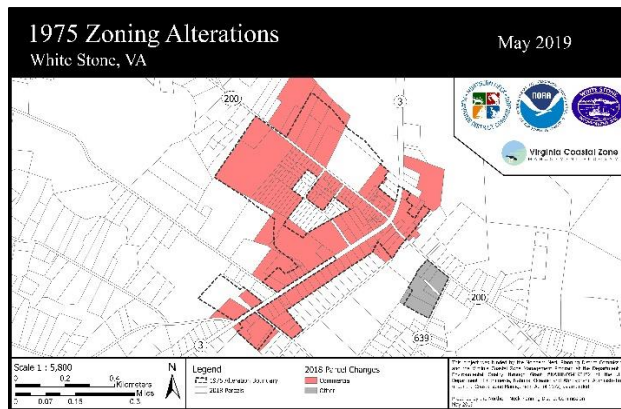


Figure 2: Town of White Stone Zoning Map

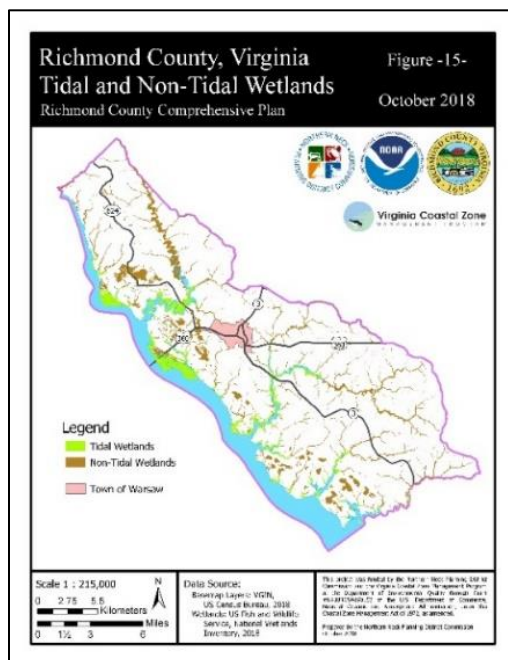


Figure 3: Richmond County Comprehensive Plan Map



Figure 4: Map showing recently acquired public access properties.



Figure 5: Map showing a recently considered public access property.

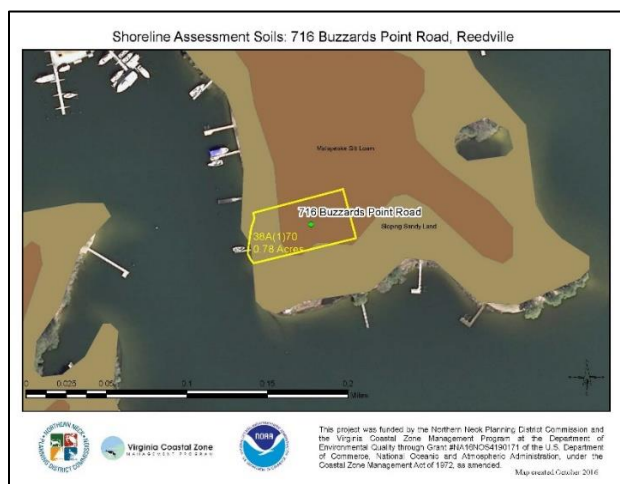


Figure 6: Shoreline Assessment Map created for the NNMG Shoreline Evaluation Program illustrating soil composition.

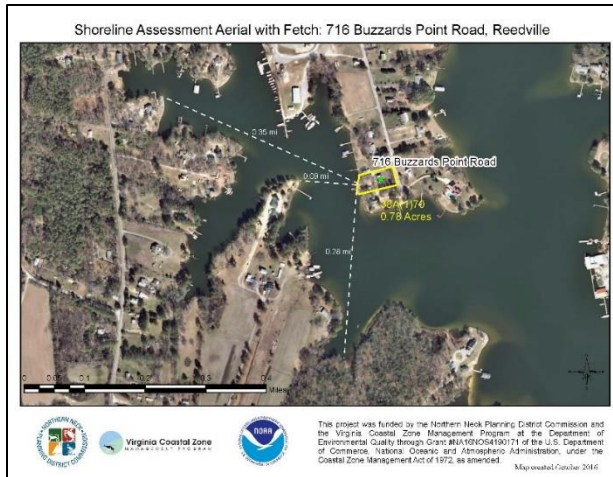


Figure 7: Shoreline Assessment Map created for the NNMG Shoreline Evaluation Program illustrating shoreline fetch.



Figure 8: A home at various stages of elevation construction.



Figure 9: A home in the Lewisetta area of Northumberland during a storm and after elevation. All living quarters are in the upper sections of the structures, with the lower sections designed to allow the free flow of floodwaters through engineered vents, causing no water damage to the buildings.





*Figure 10: Another home in the Lewisetta area of Northumberland during a storm and after elevation. All living quarters are in the upper sections of the structures, with the lower sections designed to allow the free flow of floodwaters through engineered vents, causing no water damage to the buildings.*



*Figure 11: A home in the Lewisetta area of Northumberland prior to elevation.*



*Figure 12: The same home in the Lewisetta area of Northumberland after elevation.*



Figure 13: A home in the Little Florida area of Richmond County prior to elevation.



Figure 14: A home in the Little Florida area of Richmond County after elevation.



Figure 15: Front of Virginia Oyster Trail rack card.



Figure 16: Back of Virginia Oyster Trail rack card.



Figure 17: Virginia Oyster Trail Digital Itinerary and Mapping Tool.

Month	FY19 VISITORS	FY18 VISITORS	CHANGE
September 2018	1,704	1,678	+1.50%
October 2018	2,196	2,131	+3.10%
November 2018	2,258	1,948	+15.90%
December 2018	2,052	1,679	+22.20%
January 2019	2,803	1,830	+53.20%
February 2019	3,334	1,664	+100.40%
March 2019	6,079	2,225	+173.20%
April 2019	2,920	1,789	+63.20%
May 2019	3,297	2,158	+52.80%
June 2019	2,922	1,249	+133.90%
July 2019	3,463	972	+256.30%
August 2019	3,158	1,658	+90.50%
September 2019	2,936	1,704	+72.30%
Total	39,122	22,685	

Figure 18: 2018-2019 visitation to www.NNKgreen.org